

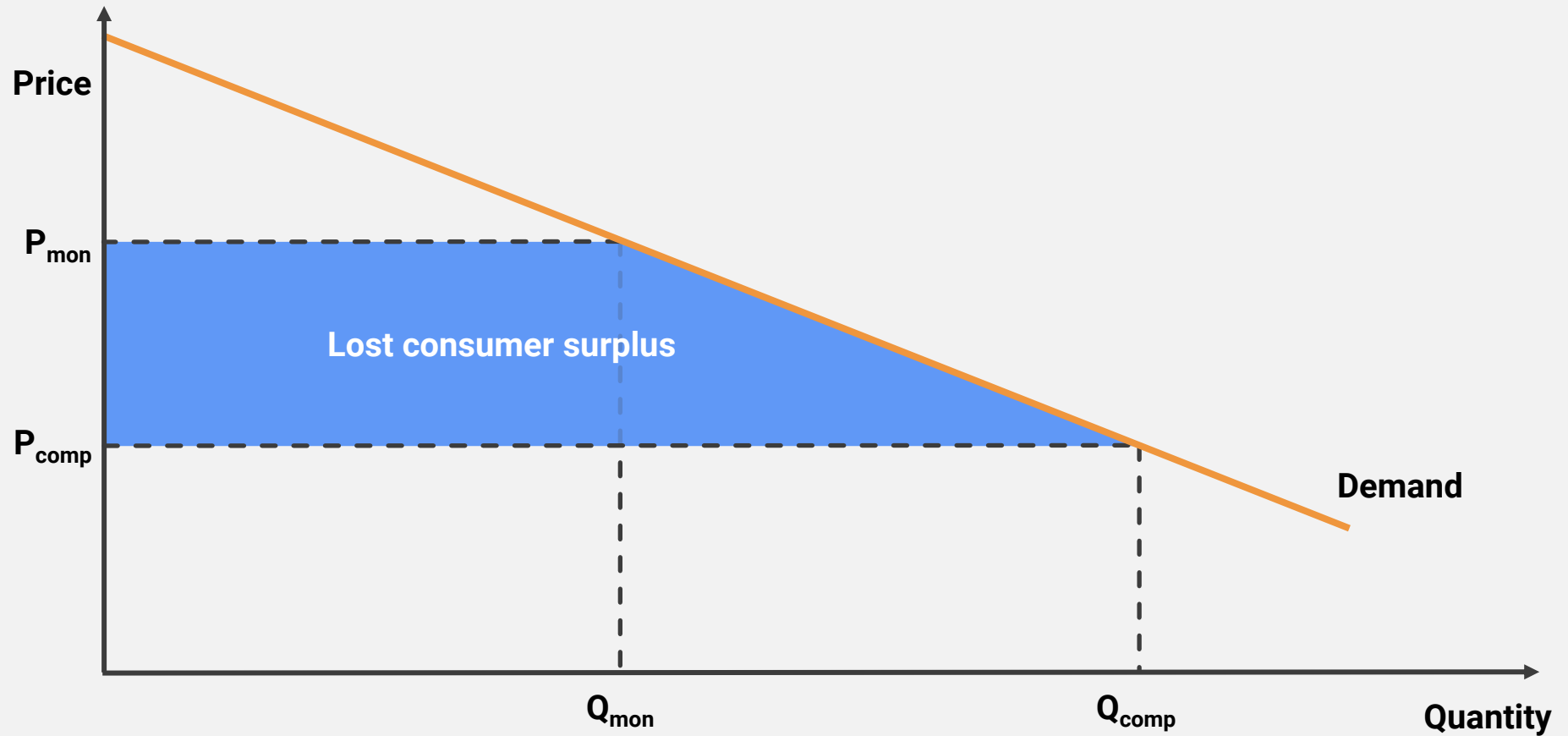
# **EXHIBIT B**

*In re Google Play Store Antitrust Litigation*

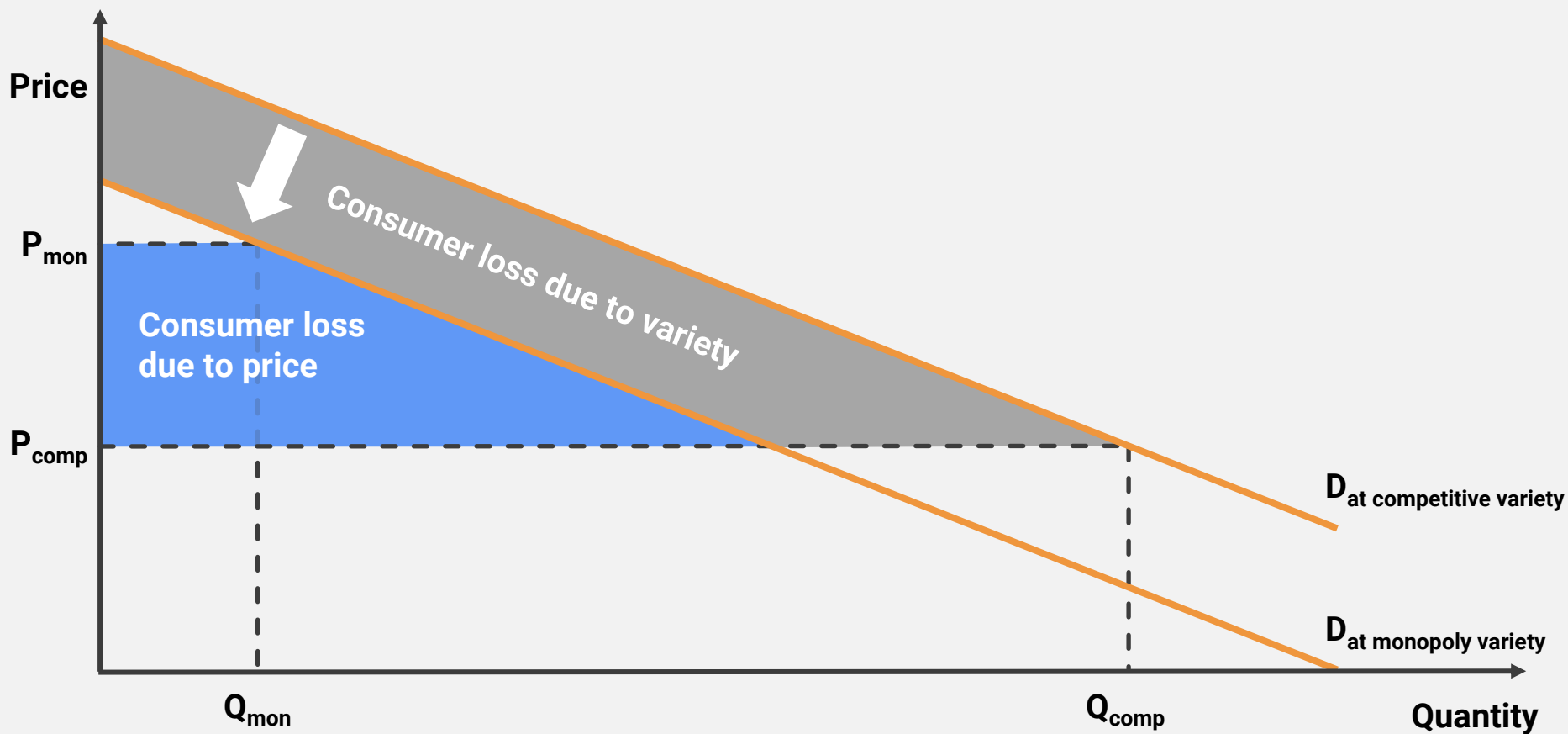
## **Concurrent Expert Proceeding for Merits Experts: Presentation of Dr. Marc Rysman**

August 1, 2023

# Consumer Welfare: Price Changes



# Consumer Welfare: Price & Variety Changes



# The Damages Seesaw

## High Pass-Through



# The Damages Seesaw

Low Pass-Through



# Dr. Rysman's Model

*Three Stages as in Dixit & Stiglitz*

1

## Entry

- Free entry

Church & Gandal (1993)

- App success is unknown

Janßen et al. (2022)

2

## Pricing

- Developers reduce price or
- Developers pocket savings, spurring entry

Church & Gandal (1993)

3

## Purchase

- Demand elasticity

Ghose & Han (2014)

- Consumer allocates budget and gains surplus

Dixit & Stiglitz (1977)

# Consumer Utility

## Solving the model of consumers making choices over apps

### Consumers get utility:

$$V(p, n) = \frac{y}{1 - t_B} \times \frac{n^{(\rho-1)}}{p}$$

$p$  – price of app transaction

$n$  – number of apps

$y$  – net consumer spending on apps/in-app content

$t_B$  – Google's discount rate (including Play Points)

$\rho$  – function of elasticity of substitution

Ghose and Han (2014) paper and shown to be conservative using my regression analyses

$n$  and  $p$  are determined by demand and costs. Solve for those following the literature.



# Calculating Damages for Intermediate Pass-Throughs Using The Model

Solving the model of competition between apps and use the following formula to evaluate damages for intermediate pass-throughs:

$$\Delta y = y \times \left[ \left[ \frac{p_1(1 - t_{B1})}{p_2(1 - t_{B2})} \right]^\rho \left[ \frac{(1 - \tau_2)p_2 - c}{(1 - \tau_1)p_1 - c} \right]^{\rho-1} - 1 \right]$$

$\Delta y$  – damages

$y$  – net consumer spending on apps/in-app content

$\rho$  – function of elasticity of substitution

Ghose and Han (2014) paper and shown to be conservative using my regression analyses

$\tau_1, t_{B1}$  – Google's actual commission rate and price discount to consumers

$\tau_2, t_{B2}$  – Google's but-for commission rate and price discount to consumers

$p_1, p_2$  – actual and but-for price. But-for price evaluated based on an assumed pass-through.

$c$  – developer marginal cost. Recovered using Lerner index.

# Damages Using 0% Pass-Through

**Damages for all U.S. Consumers, August 16, 2016 – May 31, 2022**

Model	Damages
Variety effects plus direct effects on price	10,522,937,653
Direct effects on price	194,291,949
Variety effects	10,328,645,704

# Damages Using Dr. Leonard's 3% Pass-Through

**Damages for all U.S. Consumers, August 16, 2016 – May 31, 2022**

Model	Damages
Total welfare effects	10,665,941,568
Direct effects on price	386,664,379

## Damages Using Dr. Singer's 91.1% Pass-Through

**Damages for all U.S. Consumers, August 16, 2016 – May 31, 2022**

Model	Damages
Total welfare effects	13,011,922,462
Direct effects on price	6,930,171,698